

GROWING GREEN BUILDING IN WINNIPEG

A CASE STUDY OF THE WEST BROADWAY GREEN INDICATORS PROJECT

By Jessica Roder, Master's of City Planning candidate, University of Manitoba and Alec Stuart, Environmental Coordinator, City of Winnipeg.

With special thanks to Brian Grant and Udo Staschik.

SYNOPSIS

Mandatory and voluntary policies are being used to encourage green building in several jurisdictions across North America. In Winnipeg, the West Broadway Development Corporation is developing the Green Indicators Project for use in housing initiatives and rehabilitation in their community. Ultimately, it is important to have political will backing efforts for green building programs. There must be funding and legislative support for such initiatives (Calkins, 2002). Future implications of the Green Indicators Project could include the incorporation of similar indicators into the City of Winnipeg By-laws and building regulations and an adoption of



This apartment block is part of the Kikinaw Housing Project, which used the Green Indicators Project to guide its renovations. (Photo: Jessica Roder)

triple-bottom line accounting in public spending for capital and other projects.

INTRODUCTION TO GREEN BUILDING

Green building techniques offer economic, health, environmental, and social benefits to residents and to the broader community. Green buildings are the most efficient buildings currently built. They are preferably located close to work, shopping and recreation, allowing people to walk more and increase the chance they will make the acquaintance of their neighbours. There are many advantages to green building over conventional building, including lower utility bills, cleaner air, and better interior light. Green buildings are designed, constructed and operated with the goal of using better materials, less energy and water, and lasting longer (Roder, 2006). The main idea is to benefit people and the earth more. Green Buildings offer superior performance in a variety of areas, without necessarily increasing up-front costs. In the long-term, they are more economical than conventional buildings.

Green building is catching on in the commercial sector because of the potential cost savings and the high profile it can provide to corporations. Higher end homes and owner-builders are increasingly building greener homes as well.

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Low-income homeowners and owners of rental housing are only now beginning to be offered some government assistance to perform green upgrades. Lower-income citizens are, however, most affected by energy inefficiency and low quality indoor air. The older housing stock and low quality dwellings that are affordable for this segment of the population can be very expensive to heat. Poverty is one variable demonstrated to affect health negatively (Ranson, 1991). Health problems plaguing low-income earners may be exacerbated by poor indoor air quality in the housing available to them.

With the use of integrated design, many green homes do not cost any more to build than the average home. If there is an additional cost, the investment in a better home is quickly paid back by the energy savings. However, a slight capital increase can be difficult for some prospective homeowners to cover. In addition, tenants have little say in the management of their building or in the type of renovations that could be carried out.

Material and energy costs are going to continue rising as oil and natural gas become more and more scarce. We need to construct buildings with lower energy consumption and a longer lifespan for all segments of the population. Green building meets this need while simultaneously helping to preserve our health and the environment for future generations.

THE GREEN INDICATORS PROJECT:

FACTS OF THE CASE

Since 2003, the West Broadway Development Corporation (WBDC) has undertaken several green housing initiatives. These include assessing the existing housing stock in the neighbourhood, evaluating energy performance, healthy renovations and green infill construction (Architectural & Community Planning Inc, 2005). The Green Indicators Project is a resource, currently under revision, to encourage more green building in West Broadway and potentially throughout the province. The project was initially conceived when housing renovated through West Broadway Lan Trus Inc was not performing to the standard desired.

Brian Grant, Housing Development Coordinator

GREEN BUILDINGS ARE ENHANCED IN TERMS OF:

- **Energy and water efficiency**
 - **Quality of the indoor environment (air quality, thermal comfort, lighting)**
 - **Waste management and air emissions**
 - **Reduced greenhouse gas emissions from the building and from the construction techniques and material used**
 - **Site disturbance and storm water management**
 - **Transportation options for occupants**
 - **Longevity (durability, adaptability to changing building user needs)**
 - **Life cycle costs of the building (environmental costs of construction, operation, maintenance, and removal)**
 - **Social enhancement of the community (i.e building greater local networks)**
- (adapted from www.greenbuildingsbc.com)

for WBDC, looks at the built environment in a holistic manner. He speaks of the West Broadway neighbourhood as an environmental system with a physical infrastructure (housing units, businesses, schools, sidewalks, parks, gardens, etc.) that can be rehabilitated from an ecologically sustainable perspective (personal communication, 2006).

The main goal of the Green Indicators Project is to promote energy efficiency and healthy housing principles. The Project is meant to provide an awareness of global and environmental issues through the local housing context. It is a tool to educate people about their global, local and personal responsibilities.

The Indicators are geared to local climatic conditions and make specific reference to suppliers in the Winnipeg area. They are unique in Canada in that they focus on the renovation of existing housing stock and inner-city revitalization. Other green building rating systems, such as the Canada Green Building Council's LEED program and Built Green Alberta, focus on commercial buildings and new housing. Several novel systems have already

been created through the project to deal with flood control for infill housing (in the EcoHouse) and rainwater storage and use (in the Healthy House). The Green Indicator brochure will also “serve as an educational tool to create awareness about energy efficiency, sustainable housing and new construction technologies” (Architectural & Community Planning Inc, 2005).

A tenet of the Green Indicators Project is that the buildings being renovated or constructed will ultimately be high quality, long lasting, healthy, and economical for the owners or tenants. Improving the housing stock of the city through high-quality renovations means that less

GREEN INDICATOR CATEGORIES (DRAFT)

GENERAL

- **sizing space to occupational requirements**
- **taking advantage and responding to the site specific natural elements**
- **reduction or elimination of construction waste**

HEATING AND COOLING EFFICIENCY

- **passive cooling**
- **insulation and other winter heat retention components**
- **heat sink utilization**

INDOOR AIR QUALITY

- **reduced or no VOC producing products**

RESOURCE EFFICIENCY

- **water conserving techniques and appliances**
- **rainwater utilization**
- **energy efficient appliances**
- **self-generation of energy**
- **resource efficiency and durability of building materials**
- **integration of previously used construction material into renovation process**

(Architectural & Community Planning Inc, 2005)



The rainwater storage tank and system on the second floor of the WBDC Healthy House was created and built by Burton Boryen from Advanced Design Build Inc. (Photo: Jessica Roder)

new construction will be needed in the future to replace cheaply constructed buildings.

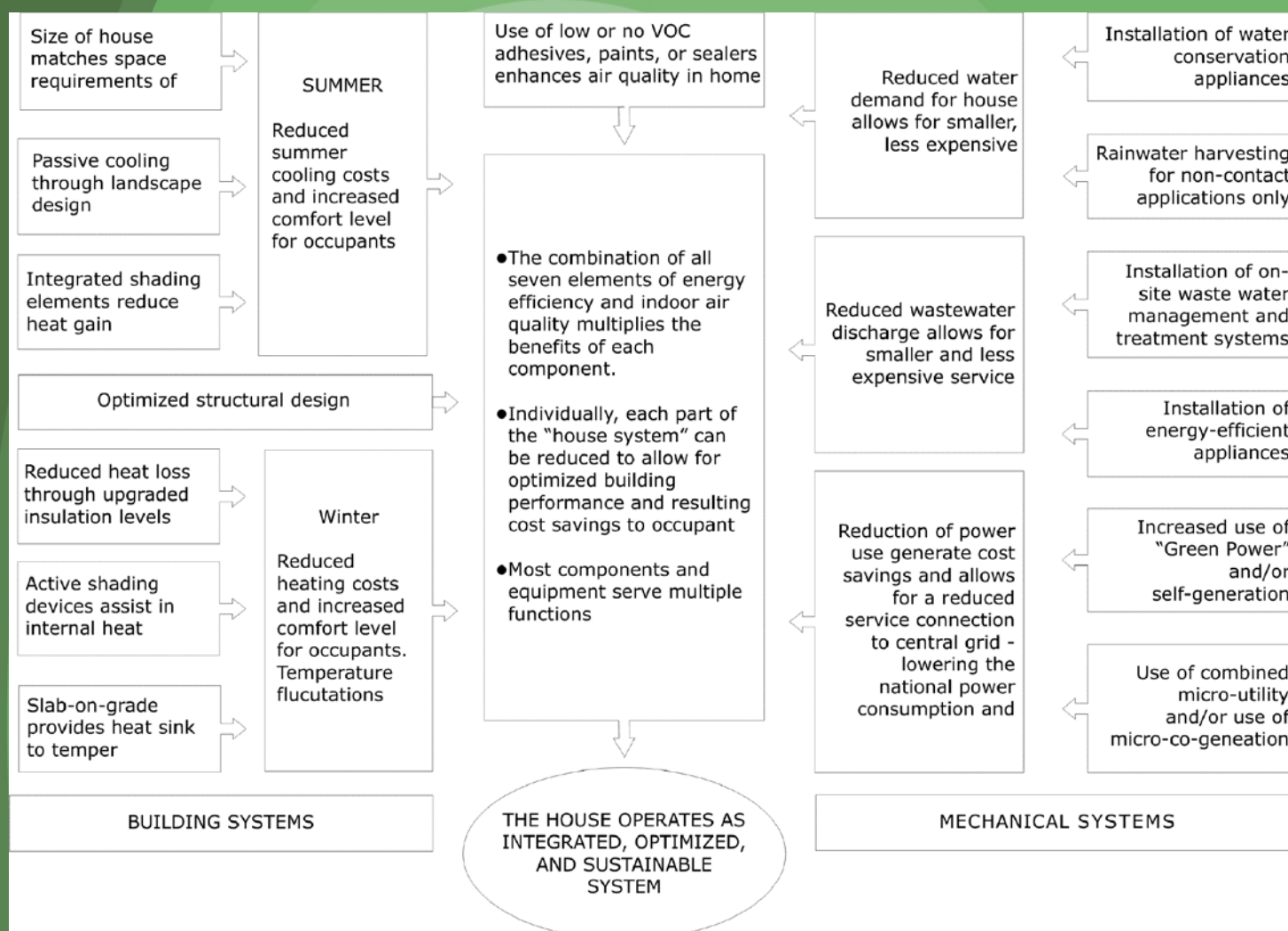
The Green Indicators Project is currently under revision by a technical committee (listed on page 6). Because the project has been initiated at the local grassroots level it is open to input from the community. The authors welcome any proposed additions, deletions or amendments to the Green Indicators. Fluctuations in the building industry entail that the project will continuously be under revision in order to stay current and meet local needs.

The Green Indicators Project is currently awaiting funding from the Canada Mortgage and Housing Corporation and the Federation of Canadian Municipalities to continue their work. CHAM Holdings, Architectural & Community Planning Inc, West Broadway Development Corporation, and West Broadway Housing Stakeholders are all partners in the program.

HOW THE GREEN INDICATORS WORK

The Green Indicators are a “system for measuring building construction or rehabilitation, while emphasizing the general elements of energy efficiency, resource

THE INTEGRATED FRAMEWORK FOR THE GREEN INDICATORS PROJECT



“To achieve the construction of a sustainable, green and eco-friendly building, all parts of the construction process have to be assessed individually as well as collectively.”

(Architectural and Community Planning, 2005)

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efficiency and indoor air quality” (Architectural & Community Planning Inc, 2005). Each indicator is a construction method, material or component intended to reduce adverse environmental impacts. Points are awarded depending on the degree to which the indicator has been met.

Four categories of indicator are used for evaluation: general, heating and cooling efficiency, indoor air quality, and resource efficiency (see side bar page 3). Each category has one or more specific green indicators within it. If a developer meets the minimum of 30% of the indicators, the project will be endorsed by the West Broadway Development Corporation with respect to applications for housing funding from any level of government (Architectural & Community Planning Inc, 2005).

It is proposed that a West Broadway Inspection Body be created to provide evaluation of the indicators met by a particular project. This may consist of a pre-renovation assessor, a consultant, and a general guide for working through the process.

GREEN BUILDING INCENTIVES

There are two basic approaches to encouraging green building. The first is mandatory regulations and the second is voluntary actions

taken by industry. Different policies have tried different forms of incentives but most use a mix of both mandatory and voluntary guidelines.

Several types of incentives can be used to encourage voluntary participation. These range from direct monetary incentives, project advocacy, allowances for increased project density, facilitation with project approval from inspectors, to free technical advice and information about green building (Calkins, 2002, p. 34). Because the WBDC is not a governing body they do not have the power to implement many of these incentives. They have focused on rewarding developers following the GIP through project advocacy. WBDC also provides information and advice about green building to interested parties.

Some municipalities are forming departments or interdepartmental teams dedicated to sustainable building so that there is consistency in requirements (Calkins, 2002, p. 34). This can help green building practitioners to get through plan-review and inspection departments, which are often hesitant about new building techniques and materials (p. 38). Portland, Oregon expedites the review of projects that will be LEED certified.

Ultimately, it is important to have political will backing efforts for green building programs.

KIKINAW HOUSING PROJECT

“Over the summer of 2005, the Green Indicators tool was adapted to a multi-residential housing initiative namely the KIKINAW Housing Project. Two older apartment buildings were purchased and rehabilitated incorporating many of the green technologies and applications that were understood by the previous experiments and with new innovations as well. In this case, both environmental and social goals were wed. Many of the new renovated units will house low-income households and provide long term affordability and personal environmental comfort for these residents.”

(West Broadway Development Corporation, 2006)

There must be funding and legislative support for such programs. “Those that don’t have broad support have run into many roadblocks” (Calkins, 2002, p. 38).

CONCLUSIONS AND OUTCOMES

Phase One of the Affordable Housing Initiative (AHI) will renovate or create around 2,500 affordable housing units with 50.78\$ million each from the Province of Manitoba and the Federal government. The Infill Housing Program will provide over 1.1\$ million in separate funding from AHI for new, affordable, energy efficient homes in Winnipeg’s inner city through the Winnipeg Housing and Homelessness Initiative (Manitoba, 2005, p. 53)). This is a huge discrepancy in funding. Why is all of the funding not directed toward energy efficient green homes? There is little extra up-front cost if integrated design techniques are used and much long-term benefit to both home-owners and funders.

One possible outcome of the Green Indicators Project is for the guidelines to be adopted as a model for future development and rehabilitation of existing neighbourhoods. From the perspective of civic staff, these guidelines represent an excellent model with which to

increase the sustainability of future infill developments and rehabilitations in Winnipeg’s older neighbourhoods. Eventually, similar indicators could be incorporated into the City of Winnipeg By-laws and Provincial building regulations. An adoption of triple-bottom line accounting in public spending for capital and other projects would be another desirable outcome.

With the potential for future energy shortages, and the issue of climate change on the horizon, the energy efficiency of buildings will become increasingly important to planners and policy-makers. In Winnipeg’s case, there is a considerable amount of older housing stock in the inner city, which will require upgrading. West Broadway’s GIP represents an innovative model to address this issue, and it is deserving of both recognition and further study. In addition, the community-driven nature of the GIP sets it apart from similar energy efficiency standards such as LEED or Canada’s R-2000 standards.

LESSONS LEARNED

There is a need to change the market and thus the choices available to the consumer. Udo Staschik feels that more stakeholders should have been brought into the planning process for the project from the beginning (personal communication, 2006). Ideally, industry representatives from the Manitoba Building Owners Associations and building material suppliers would have been involved in the project to a greater extent.

The Department of Family Services and Housing needs to expand their policy of providing “safe, affordable, and appropriate housing” (Manitoba, 2005, p. 12) to include energy efficiency and environmental design. Money being spent on the inner city needs to be directed towards sustainable initiatives that will provide a high quality of housing rather than simply a high quantity of housing.

There have been no strong objections to the Green Indicators Project but they have also not been fully embraced by other organizations in the city or by different levels of government (though some funding has been provided). The Project is sitting in what Staschik (2006) refers

to as a benevolent vacuum. This is a relatively easy place to grow from and is positive for the future of the project. While other development corporations in the city have demonstrated little interest in the Green Indicators Project there is interest in Thompson, MB and in British Columbia. Hopefully its influence will continue to grow.

GREEN INDICATORS PROJECT COMMITTEE

The committee has been involved since 2003 in the development of a series of drafts for the Green Indicators Project.

Brian Grant, WBDC (Chairperson)
Robert Loiselle, WBDC
John Schwandt, WBDC
Mario Lopes, WBDC
Nigel Baseley, WBDC
Bob Shaer, ASH Management Group
Barry Lawrence, Marketing Writer
Henry DeCuypere, CHAM Holdings Group
Brian J. Pannell, Young United Church,
KIKINAW Housing Project
Burton and Ellen Boryen, Advanced Design
Build Inc.
Udo Staschik, ACPI
Winnipeg Housing & Homelessness Initiative
Neighbourhoods Alive!

GREEN INDICATORS PROJECT TECHNICAL COMMITTEE

The Technical Committee sits under West Broadway Development Corporation's Housing Stakeholders Group. It consists of:

Rodney McDonald
Ken Klassen
Burton Boryen
Nigel Baseley
Ellen Boryen (Administrator)
Chuck Surgenor
Desmond Burke
Udo Staschik (Chairperson)

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